

1. A VEGF variant polypeptide comprising one or more amino acid mutations in the amino acid sequence of native VEGF and having selective binding affinity for KDR receptor.

3. The VEGF variant of claim 1, wherein said one or more amino acid mutations comprises one or more amino acid substitutions at or between positions 63 to 66 of the native VEGF sequence.

15 5. The VEGF variant of claim 1, wherein said polypeptide comprises at least three different amino acid mutations and three of said amino acid mutations are the following amino acid substitutions: D63S, G65M, L66R.

7. The VEGF variant of claim 1, wherein said polypeptide comprises at least four different amino acid mutations and four of said amino acid mutations are the following amino acid substitutions: Y21L, D63S, G65M, L66R.

8. An isolated nucleic acid comprising a DNA sequence encoding the VEGF variant of claim 1.

9. The isolated nucleic acid of claim 8, wherein said DNA
30 sequence encodes the VEGF variant of claim 4.

10. The isolated nucleic acid of claim 8, wherein said DNA sequence encodes the VEGF variant of claim 5.

11. The isolated nucleic acid of claim 8, wherein said DNA sequence encodes the VEGF variant of claim 6.

35 12. The isolated nucleic acid of claim 8, wherein said DNA
sequence encodes the VEGF variant of claim 7.

13/ A vector comprising the nucleic acid of claim 8.

14. A host cell comprising the vector of claim 13.

15. A composition comprising the VEGF variant of claim 1 and a carrier.

16. The composition of claim 15 wherein said carrier is a pharmaceutically acceptable carrier.

5 17. An assay to detect KDR receptor, comprising contacting a cell or tissue with the VEGF variant of claim 1 and detecting binding of said VEGF variant to KDR receptor(s) which may be present in or on said cell or tissue.

10 18. A method of stimulating vasculogenesis or angiogenesis, comprising exposing mammalian cells expressing KDR receptor to an effective amount of the VEGF variant of claim 1.

19. An article of manufacture, comprising a container holding the composition of claim 15 and a label on said container providing instructions for use of said composition *in vitro* or *in vivo*.

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